

Appl. No. 10/709,428
Amdt. dated February 23, 2005
Reply to Office action of December 15, 2004

REMARKS/ARGUMENTS

1. Rejection of claims 1-10 under 35 U.S.C. 102(b):

Claims 1-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Yu (RE 37,982) for reasons of record, as recited on page 2 of the above-indicated Office action.

Response:

The applicant has amended claims 1 and 6 to overcome this rejection. Claims 1 and 6 now contain the limitation "a first bonding pad being electrically connected to the package substrate without being attached to the package substrate." This amended limitation is fully supported in Figs.4-6 of the instant application, along with the corresponding paragraphs of the specification. As shown in Fig.6, the bonding pad 48 is electrically connected to the package substrate 42 without being attached to the package substrate 42.

On the other hand, Yu teaches in Fig.1 that bonding pads 11 are attached directly to the substrate of the semiconductor chip 10. Therefore, the currently amended claims 1 and 6 are patentably distinguished from the Yu reference.

In addition, claims 1 and 6 have also been amended to use the terms "first bonding pad" and "second bonding pad" instead of "one of the bonding pads" for clarifying the claim language. Dependent claims 2-5 and 7-10 have been amended to correct grammar errors. No new matter is introduced through any of the amendments to claims 1-10.

Claims 2-5 and 7-10 are dependent on claims 1 and 6 and should be allowed if claims 1 and 6 are allowed. Reconsideration of claims 1-10 is respectfully requested.

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2. Introduction to new claims 11-26:

New claims 11 and 19 are based on original claims 1 and 6, respectively. In addition, claims 11 and 19 also contain the limitations "a first bonding pad directly contacting the package substrate" and "a first lead frame directly contacting a second bonding pad." These amended limitations are fully supported in Fig.5 and Fig.6, along with the corresponding paragraphs of the specification. That is, two distinct bonding pads are recited in claims 11 and 19, with one directly contacting the package substrate and the other directly contacting a first lead frame.

On the other hand, Yu teaches in Fig.1 connecting a wired pin WP directly to a bonding pad 11, and connecting a non-wired pin NW directly to the metal lead frame 12. Yu does not teach a lead frame directly contacting a bonding pad. Neither Fig.1, Fig.2, nor the corresponding sections of the specification disclose such a direct connection between the lead frame and a bonding pad. Therefore, currently amended claims 11 and 19 are patentably distinct from Yu, and should be allowed.

New claims 12-14 and claims 20-22 are duplicates of claims 2-4 and 7-9. New claims 15 and 23 are written to recite that the voltage level of the first pin is the logical opposite of the voltage level of the package substrate. This amendment is supported by paragraph [0022] of the specification.

Claims 16-18 and claims 24-26 are added to further distinguish the present invention from the Yu reference. Claims 16 and 24 contain the limitation of a second lead frame and a third bonding pad directly contacting the second lead frame. Claims 17 and 25 state that the second lead frame is connected to a second pin of the chip, whereas claims 18 and 26 recite that the second pin is used for receiving input signals or sending output signals. Each of these limitations is fully supported by

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paragraph [0022] of the specification. No new matter has been added.

Yu does not teach the use of a second lead frame, and only teaches the first lead frame 12. Furthermore, Yu also does not teach a second pin used for receiving and transmitting input and output signals connected to the second pin. For these reasons, 16-18 and claims 24-26 are also patentably distinct from the Yu reference.

Acceptance of new claims 11-26 is requested. Since the applicant submits that all of the amended claims and new claims are allowable over the Yu reference, the applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Sincerely yours,

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Note: Please leave a message in my voice mail if you need to talk to me. The time in D.C. is 13 hours behind the Taiwan time, i.e. 9 AM in D.C. = 10 PM in Taiwan).